Introduction to Six Sigma
1. History of Quality (Deming, Juran, JIT, Ishikawa, Taguchi, etc.)
2. Evolution of Six Sigma
3. Defining Six Sigma – philosophy and objectives
4. Overview of Six Sigma DMAIC process

Stakeholders & Setting up a Six Sigma Project
1. Identifying and documenting stakeholder requirements
   - Identifying stakeholders and customers
   - Data collection and analysis
   - Determining critical requirements
2. Project Selection Criteria
   - Identifying performance metrics
   - Using Financial criteria to evaluate project benefits
   - Maximizing project benefits for the organization
3. Project Planning
   - Creating Project Charter b. Charter Negotiation
4. Managing Team Dynamics
   - Initiating teams b. Stages of team evolution c. Maslow’s hierarchy of needs
d. Motivation Techniques e. Conflict Resolution Techniques f. Management / Leadership styles g. Roles played by people in a project
5. Important project management & planning tools

Six Sigma Methodology – Define
1. Inputs – Need for Six Sigma project, Executive management sponsorship, core team Identified.
2. Tools
   - Organization hierarchy
   - High level process maps
   - High level Pareto charts
   - Idea generation and categorization tools
3. Outputs
   - Project charter
   - Established metrics
   - Problem statement
   - Roles & responsibilities

**Six Sigma Methodology – Measure**

1. Objectives of Measure Phase
2. Inputs – the outputs of the Define phase
3. Tools
   - Data collection tools and techniques
   - Measurement scales
   - Validation techniques (Gauge R & R)
   - Statistical distributions
   - Data mining
   - Run charts
   - Process map
   - Stakeholder tools
   - Process costs
4. Outputs
   - Well defined processes
   - Baseline process capability
   - Process parameters affecting CTQs
   - Cost of poor quality (COPQ)
   - Measurement system

**Six Sigma Methodology – Analyze**

1. Objectives of Analyze Phase
2. Inputs – outputs of the Measure phase
3. Tools
   - Ishikawa diagram
   - Failure mode and effects analysis
   - Hypothesis testing
   - Process capability study
4. Outputs
- Important causes of defects
- Special and common causes of variation
- DPMO and sigma level

**Six Sigma Methodology – Improve**

1. Objectives of Improve Phase

2. Inputs – outputs of the Analyze phase

3. Tools
   - Returns on investment
   - Solution design matrix
   - Design of experiment
   - Taguchi robustness concepts
   - Response surface methodology
   - Project planning and management tool
   - Prototypes

4. Outputs
   - Cost / benefit for different solution
   - Selection of solutions for implementation
   - Implementation plan

**Six Sigma Methodology – Control**

1. Objectives of Control Phase

2. Inputs – outputs of the Improve phase

3. Tools
   - Control plan
   - Statistical process control
   - Lean enterprise
   - 5S
   - Kaizen
   - Kanban
   - Total productive maintenance
• Measurement system reanalysis

4. Outputs

• Implemented solutions
• Revised measurement system
• Control plan for sustaining benefits
• Improves process capability
• Lessons learned

• Case of Study
  • Case Study Part 1
  • Case Study Part 2
  • Case Study Part 3